

REMARKS/ARGUMENTS:

Claim 64 is amended. New claim 71 is added. The support for claim 71 can be found on page 16, lines 14-19, and page 17, lines 27-32. No new matter is introduced. Claims 29-42, 55-62, 64-66, and 68-71 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

Claim Rejections Under 35 U.S.C. § 112:

Claims 64-66 and 68-70 stand rejected under 35 U.S.C. § 112 for not providing an antecedent basis for the term “target biopolymers” in claim 64. In response, applicants amended claim 64 by replacing the term “biopolymer” recited in the steps (f) and (g), which are now steps (e) and (f), respectively, with the term “polypeptide.” Applicants respectfully submit that there is now a sufficient antecedent basis for the “polypeptide” limitation. Withdrawal of this rejection is thus respectfully requested.

Claim Rejections Under 35 U.S.C. § 102:

Claims 64-66 and 68 stand rejected under 35 U.S.C. §102(b) as being anticipated by Fareed *et al.*, U.S. Pat. No. 4,970,144, issued November 30, 1990 (Fareed). Applicants respectfully traverse this rejection.

The Examiner appears to believe that because Fareed discloses that “antibodies may be covalently or physically bound to the solid phase immunoadsorbent by techniques such as covalent binding via an amide or ester linkage or by absorption,” it is “inherent that the surface of the solid phase is modified and the immobilization is by absorption.” Office Action of June 2, 2004, page 4. Further, the Examiner interprets the phrase “their derivatives” in claim 64 as referring to “any functional group which modifies the surface of the solid phase,”

which leads the Examiner to the conclusion that Fareed makes claim 64 unpatentable. *Id.* Applicants respectfully disagree.

As was stated in the previous responses submitted by applicants, Fareed does not teach or suggest, either explicitly or inherently, a modified surface as defined in the instant invention. Fareed has no teaching whatsoever of modification of a substrate surface with amino, carboxyl, thiol group or their derivatives to facilitate adsorption as the Examiner alleges. In the excerpt cited by the Examiner, Fareed describes “*covalent bonding* via an amide or ester linkage,” not an adsorption via an amide or ester linkage. Column 10, lines 24-29.

Fareed does not suggest immobilization of polypeptides by drying on modified substrate. As was discussed in applicants’ earlier responses, at most, Fareed teaches a conventional ELISA assay with a two-step immobilization of protein. The first step involves an overnight drying of 50 μ l of the protein solution in the wells of a conventional microplate and the second step involves the immobilization of protein by “filling the wells with absolute methanol to fix the protein onto the dish” (column 14, lines 1-2). Based on such teaching, those skilled in the art would have not been motivated to modify the material of standard microplates to arrive at substrates with the modified surfaces of the present invention, much less to omit the protein-fixing step of the standard ELISA protocol without the hindsight of the present invention. Therefore, Fareed does not teach or suggest the immobilization of polypeptides by drying on modified substrates and, thus, does not anticipate or make present claim 64 obvious.

Although applicants believe that claim 64 is patentable over Fareed as presented in the previous response, in order to expedite prosecution of the instant application, applicants have amended claim 64 by deleting the phrase “and their derivatives.” The closed transition “consisting of” limits the scope of amended claim 64 to surfaces modified with only amino, carboxyl, and thiol groups. Fareed does

not teach or suggest adsorption of polypeptides on substrates modified with amino, carboxyl, or thiol groups. Therefore, Fareed does not anticipate or render obvious claim 64.

In addition, the independent claim 64 has been further amended by eliminating the step of washing the probe assay article or the target assay article to remove loosely bound probe or target polypeptides. This limitation is believed to be unnecessary for the patentability of claim 64, particularly in view of "their derivatives" language being removed from amended claim 64.

Amended claim 64 is patentable over Fareed as discussed above. Claims 65-66 and 68 depend from claim 64 and are not anticipated or rendered obvious by Fareed for at least the same reasons as claim 64. Withdrawal of the rejection under 35 U.S.C. §102(b) and allowance of claims 64-66 and 68 is thus respectfully requested.

Claim Rejections Under 35 U.S.C. §103:

Claims 69 and 70 stand rejected under §103(a) as being unpatentable over Fareed. Applicants respectfully traverse this rejection. Claims 69 and 70 depend from claim 64, and are patentable over Fareed for at least the same reasons as amended claim 64. Withdrawal of this rejection and allowance of Claims 69 and 70 is thus respectfully requested.

Claim 71 has been added. Applicants submit that claim 71 depends from claim 64, and is patentable over Fareed for at least the same reasons as claim 64. Allowance of Claim 71 is thus respectfully requested.

The applicants note with appreciation that the rejections of Claims 29-42 and 55-62 under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been withdrawn and that claims 29-42 and 55-62 have been indicated to be allowable.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6700 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Dated: July 30, 2004

By: 
Wei-Ning Yang
Registration No. 38,690
Attorneys for Applicant(s)

Biltmore Towers
500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Telephone: 213-337-6700
Facsimile: 213-337-6701